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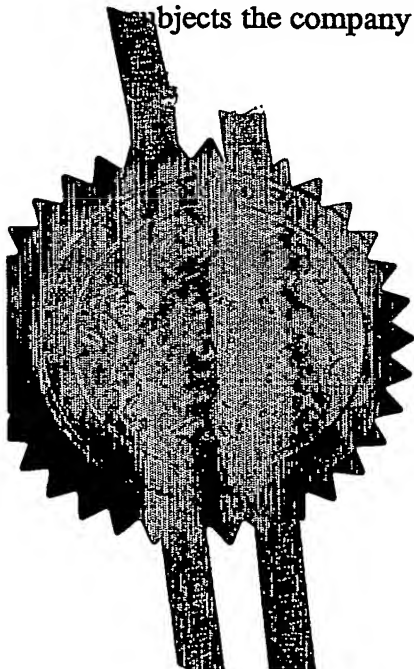
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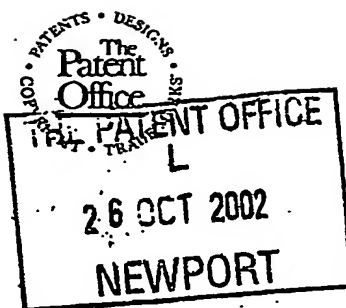
*Andrew Gervay*

Dated

1 December 2003

Patents Form 1/77

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The Patent Office

Cardiff Road  
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1. Your reference	som.2558.uk.kv.d		
2. Patent application number (The Patent Office will fill in this part)	0224992.8		26 OCT 2002
3. Full name, address and postcode of the or of each applicant (underline all surnames)	Marie <u>Somerville</u> 69 Alexander Avenue Eaglesham GLASGOW G76 ODS		
Patents ADP number (if you know it)  If the applicant is a corporate body, give the country/state of its incorporation			
4. Title of the invention	Insect repellent		
5. Name of your agent (if you have one)	Kennedys Patent Agency Limited		
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)	Floor 5, Queens House 29 St Vincent Place GLASGOW G1 2DT		
Patents ADP number (if you know it)			
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day / month / year)	
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if: a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body. See note (d))	No		

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Continuation sheets of this form

Description 9

Claim(s)

Abstract

Drawing(s) -

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Priority documents

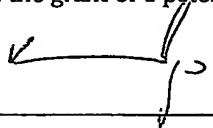
Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.
- |           |  |                 |
|-----------|--|-----------------|
| Signature |  | Date            |
| KENNEDYS  |  | 25 October 2002 |
12. Name and daytime telephone number of person to contact in the United Kingdom
- |              |               |
|--------------|---------------|
| Karen Veitch | 0141 226 6826 |
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1 Insect Repellent

2  
3 The present invention relates to an insect repellent.  
4 More particularly the present invention relates to a  
5 composition, which can be applied to the skin in order to  
6 repel insects including, but not limited to mosquitoes  
7 and midges.

8  
9 In a number of European countries including the UK, and  
10 particularly Scotland, the midge and horsefly are serious  
11 irritants, to tourists, gardeners and sports enthusiasts,  
12 such as ramblers, hill-walkers, climbers, etc. It is  
13 estimated that around 14,000 species of midge exist, some  
14 of which carry viruses which are known to be dangerous to  
15 animals. Whilst in general, midge bites are not  
16 particularly dangerous and rarely result in disease in  
17 humans, the bites can be unpleasant and cause pruritis  
18 (itching), urticaria (skin eruptions) and localised  
19 inflammation. Unfortunately, it is thought that the  
20 prevalence of these pests may increase as worldwide  
21 climate changes occur.

22

1 The common midge and fly are irritating but generally  
2 harmless pests. However in many countries serious and  
3 potentially fatal diseases are spread by insects, such as  
4 mosquitoes. For example, the mosquito-borne illness,  
5 malaria, is one of the main killer diseases of the world,  
6 and causes an estimated 1 to 2 million deaths per year.  
7 In some parts of Africa it is estimated that 10% of the  
8 total mortality of infants under the age of 5 is due  
9 directly to the disease. Although historically this  
10 serious illness was localised in tropical areas such as  
11 Central and South America, the Middle East, the Indian  
12 sub-continent and Asia, the prevalence of malaria is  
13 rising due to temporary migration of the population  
14 between these countries, primarily due to the increase in  
15 popularity of tropical destinations for holidays and  
16 vacations. This is exemplified in the UK, where the  
17 number of reported cases of malaria has increased  
18 dramatically in recent decades due to foreign travel.  
19 Although malaria can be cured with prescription drugs,  
20 many mosquito species have developed resistance to common  
21 anti-malarial drugs. Therefore, as with many insect  
22 borne illnesses, prophylaxis is seen as preferable to  
23 cure. This is generally achieved through a combination  
24 of vaccination and also by the prevention of bites in the  
25 first instance.

26

27 Other diseases spread by insects, include the viral  
28 illnesses Yellow Fever, Dengue Fever, Encephalitis and  
29 Filariasis which are all mosquito-borne. For the  
30 majority of these illnesses there are no preventative  
31 vaccines, and often no specific treatment. Thus the  
32 essence of prevention is to avoid being bitten in the  
33 first place. For example at present there is no

1 effective drug treatment for Yellow Fever or  
2 Encephalitis, and therefore prophylaxis is essential.  
3 Yet further, there is no current effective vaccination  
4 for Dengue Fever, and therefore it is vitally important  
5 that the initial insect bite is avoided.

6  
7 Other insect-borne diseases include leishmaniasis which  
8 is transmitted by sandflies; sleeping sickness  
9 transmitted by the tsetse fly; lyme disease and typhus  
10 fever which are transmitted by ticks.

11  
12 The demand for suitable insect repellents is therefore at  
13 an all-time high. There are many well known insect  
14 repellents on the market. Historically, most include the  
15 chemical DEET (diethyl toluamide). Whilst this chemical  
16 has been proven to be highly effective in repelling  
17 insects, it is highly toxic and can be absorbed through  
18 the skin. Yet further, DEET can act as a skin irritant  
19 and has a disagreeable odour. In addition, care must be  
20 taken to avoid furnishings, plastic, varnished and  
21 painted surfaces, when using repellents containing this  
22 chemical. Accordingly, in recent years there has been a  
23 move towards the search for natural, non-toxic yeast  
24 effective insect repellents, which do not cause  
25 irritation or toxicity to the user.

26  
27 It is an object of the present invention to provide a  
28 natural insect repellent, which is non-toxic to the user.

29  
30 Yet further, it is an object of the present invention to  
31 provide a natural insect repellent, which is non-irritant  
32 and has a pleasant smell.

1 It is a further aim of the present invention to provide  
2 an insect repellent, which is effective against insects  
3 such as fleas, ticks, gnats and, in particular, midges  
4 and mosquitoes.

5  
6 According to a first aspect of the present invention,  
7 there is provided a composition, which is effective in  
8 repelling insects, comprising a mixture of essential oils  
9 in a carrier oil.

10  
11 Preferably the essential oils are lime oil, myrtle,  
12 citronella oil, eucalyptus oil and neem oil.

13  
14 Most preferably the myrtle is bog myrtle.

15  
16 In a preferred embodiment, the carrier oil is grape seed  
17 oil. However, other carrier oils may be used, including  
18 almond oil, avocado oil, vegetable oil, wheat flour oil  
19 or sun germ oil or a mixture thereof.

20  
21 Preferably the carrier oil constitutes 50% of the  
22 composition.

23  
24 Preferably the essential oils constitute 50% of the  
25 composition.

26  
27 Preferably the lime oil is present in a concentration of  
28 between 8 and 12 drops per  $\frac{1}{2}$  ml of the composition.

29  
30 Most preferably the lime oil is present in a  
31 concentration of 10 drops per  $\frac{1}{2}$  ml of the composition.

32

1 Preferably the myrtle oil is present in a concentration  
2 of between 28 and 32 drops per 1½ ml of the composition.

3  
4 Most preferably the myrtle oil is present in a  
5 concentration of 30 drops per 1½ ml of the composition.

6  
7 Preferably the citronella oil is present in a  
8 concentration of between 190 and 210 drops per 10ml of  
9 the composition.

10  
11 Most preferably the citronella oil is present in a  
12 concentration of 200 drops per 10 ml of the composition.

13  
14 Preferably the eucalyptus oil is present in a  
15 concentration of 3 to 7 drops per ¼ ml of the composition.

16  
17 Most preferably the eucalyptus oil is present in a  
18 concentration of 5 drops per ¼ ml of the composition.

19  
20 Preferably the neem oil is present in a concentration of  
21 between 740 and 760 drops per 37ml of the composition.

22  
23 Most preferably the neem oil is present in a  
24 concentration of 750 drops per 37 ml of the composition.

25  
26 Preferably the carrier oil is present in a concentration  
27 of 23 ml.

28  
29 Optionally the composition is provided as a spray.

30  
31 The composition is intended for topical use.

32



1 The composition repels insects including, but not limited  
2 to midges, mosquitoes, gnats, ticks, flies and fleas.

3

4 Preferably the composition has a pleasant odour.

5

6 According to a second aspect of the present invention,  
7 there is provided a composition, which is effective in  
8 repelling insects, comprising a mixture of lime oil,  
9 myrtle, citronella oil, eucalyptus oil and neem oil.

10

11 Most preferably the myrtle is bog myrtle.

12

13 Preferably the essential oils constitute 50% of the  
14 composition.

15

16 Preferably the lime oil is present in a concentration of  
17 between 8 and 12 drops per  $\frac{1}{2}$  ml of the composition.

18

19 Most preferably the lime oil is present in a  
20 concentration of 10 drops per  $\frac{1}{2}$  ml of the composition.

21

22 Preferably the myrtle oil is present in a concentration  
23 of between 28 and 32 drops per 1  $\frac{1}{2}$  ml of the composition.

24

25 Most preferably the myrtle oil is present in a  
26 concentration of 30 drops per 1  $\frac{1}{2}$  ml of the composition.

27

28 Preferably the citronella oil is present in a  
29 concentration of between 190 and 210 drops per 10ml of  
30 the composition.

31

32 Most preferably the citronella oil is present in a  
33 concentration of 200 drops per 10 ml of the composition.

1  
2 Preferably the eucalyptus oil is present in a  
3 concentration of 3 to 7 drops per ¼ml of the composition.  
4

5 Most preferably the eucalyptus oil is present in a  
6 concentration of 5 drops per ¼ ml of the composition.  
7

8 The neem oil comprises the remainder of the composition  
9 and acts as a carrier oil.  
10

11 Optionally the composition is provided as a spray.  
12

13 The composition is intended for topical use.  
14

15 The composition repels insects including, but not limited  
16 to midges, mosquitoes, gnats, ticks, flies and fleas.  
17

18 Preferably the composition has a pleasant odour.  
19

20 According to the third aspect of the present invention,  
21 there is provided a composition, which is effective in  
22 repelling insects, comprising a mixture of essential oils  
23 and a base cream.  
24

25 Preferably the essential oils are lime oil, myrtle,  
26 citronella oil, eucalyptus oil and neem oil.  
27

28 Most preferably the myrtle is bog myrtle.  
29

30 Optionally the composition comprises a carrier oil which  
31 may be grape seed oil, however other carrier oils may be  
32 used, including almond oil, avocado oil, vegetable oil,  
33 wheat flour oil or sun germ oil or a mixture thereof.

Typically the base cream comprises a mixture of aqua, prunus dulcis, glycerine (vegetable), cetearyl alcohol, stearic acid, triethanolamine, ceteareth 20, methyl paraffin, imidazolidinyl urea and propyl paraffin.

The composition is intended for topical use.

Preferably the composition has a pleasant odour.

Advantageously, the described composition has an agreeable smell, and is completely natural and non-toxic to the user.

In the present invention, it has been discovered that the described composition has surprisingly superior and super-additive effectiveness over conventional insect repellents in repelling midges and mosquitoes.

Specifically, it has been discovered that by preparing a composition comprising 10 drops per  $\frac{1}{2}$  ml of lime oil, 30 drops per  $1\frac{1}{2}$  ml of bog myrtle, 200 drops per 10 ml of citronella oil, 5 drops per  $\frac{1}{4}$  ml of eucalyptus oil and 740 drops per 37 ml of neem oil, preferably with a carrier oil results in a superior non-toxic insect repellent.

In the preferred embodiment, grape seed oil is used as a carrier, however it will be appreciated that any suitable natural oil, such as almond oil, avocado oil, vegetable oil, wheat flour oil or sun germ oil, or indeed a mixture thereof could be used.

1 It is also appreciated that any form of eucalyptus, such  
2 as lavender eucalyptus or lemon eucalyptus could be used  
3 within the composition. Similarly, whilst the use of bog  
4 myrtle is preferred, any alternative and corresponding  
5 type of myrtle, such as white myrtle, could be used.

6  
7 In an alternative embodiment, the carrier oil could be  
8 removed altogether, and the neem oil could be substituted  
9 as the carrier base.

10  
11 The effectiveness of the composition described in the  
12 present Application is tested using female mosquitoes  
13 which are bred and incubated in the normal manner. A  
14 tester applies the composition to both hands, and these  
15 are inserted into a closed box which contains a set  
16 number of mosquitoes, typically 20, for a set period of  
17 time. Effectiveness is calculated by two means, firstly  
18 by visual observation of the number of mosquitoes which  
19 land on the tester's hands, and secondly by counting of  
20 the number of visible bites which appear at the end of  
21 the test.

22  
23 Modifications and improvements may be made to the  
24 foregoing without departing from the scope of the  
25 invention.